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**DISK CONTROLLER CONFIGURED TO PERFORM OUT OF ORDER
EXECUTION OF WRITE OPERATIONS**

Abstract of the Disclosure

5 A hard disk unit includes a disk, a controller microprocessor, a host bus interface, a buffer memory, a buffer memory controller, and a disk formatter. The bus interface receives write operations, and the buffer memory controller stores the corresponding write operation data in the buffer memory in the relative order in which the operations are received. The buffer memory controller subsequently transfers the data of a write operation from the buffer memory to the disk formatter, which formats the data and writes it to the disk. The buffer memory controller controls read and write access to the buffer memory. The buffer memory controller includes a set of address registers and a set of block count registers. The microprocessor loads the address registers with the addresses within the buffer memory of the data of two or more write operations. The microprocessor loads the block count registers with the size, in blocks, of the corresponding operations. The microprocessor then issues a single command to the buffer memory controller to transfer the data identified by the address registers and block count registers from the buffer memory to the disk formatter. The address registers and block count registers enable the buffer memory controller to transfer the data of several write operations in any order. Previous buffer controllers are typically capable of transferring the data of several write operations only in the same order in which the data is stored in the buffer memory.

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